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## MARINE SURVEY REPORT

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**Report Number :** 2009S/1539C

**Date of Inspection :** January 18, 2010

**Commissioned by :** [REDACTED] to photograph\*, document and determine the cause, nature and effect of a fractured bulkhead and related damages.

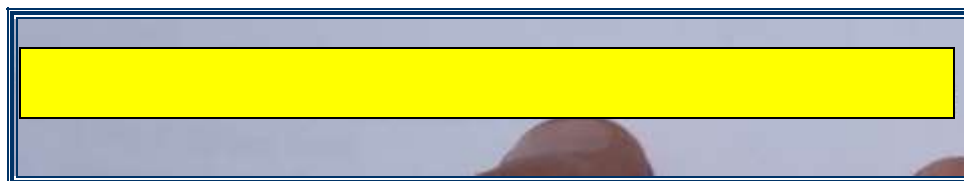
**Address :** [REDACTED]

**e-mail :** [REDACTED]

**Phone :** [REDACTED]

### GENERAL

**Make of Vessel :** [REDACTED]



HIN/MIC from builders' certificate

\*A separate file of original, un-adjusted digital photographs is available.

## SURVEY SITE

The vessel was inspected indoors, supported on eight jack stands at Bristol Marine, Mississauga, Ontario

## SCOPE OF SURVEY

The purpose of this inspection and survey report is to determine, insofar as possible within the limitations of visual and physical accessibility, through non-invasive and non-destructive means (by the surveyor), the vessel's condition at time of survey by reporting deficiencies related to the fracture in the forward saloon bulkhead to starboard of the door and apparently related hull liner shift.

## Findings at time of inspection

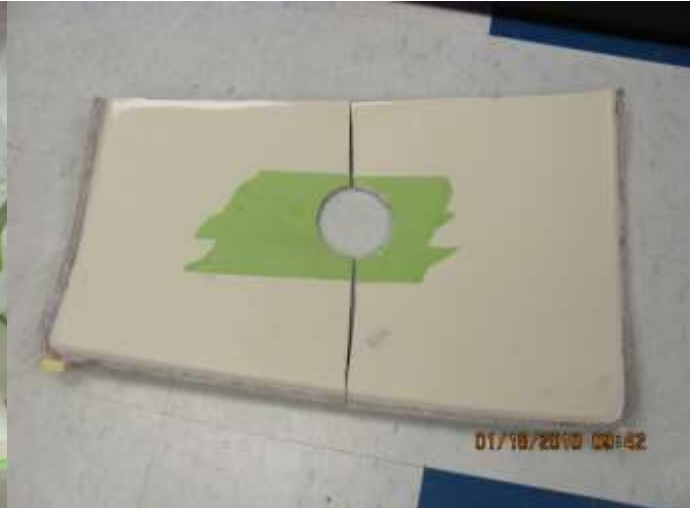
The pan liner in the section below the starboard chain plate tie rod had been cut out and the two pieces were inspected. An approximately 4' diameter inspection hole had been cut in the port side pan below the chain plate tie rod. The perimeter bonding of the liner appears intact where accessible although access is limited.

### **All photos taken January 18, 2010**

Starboard pan liner cut out, below chain plate,



Pan cut out section



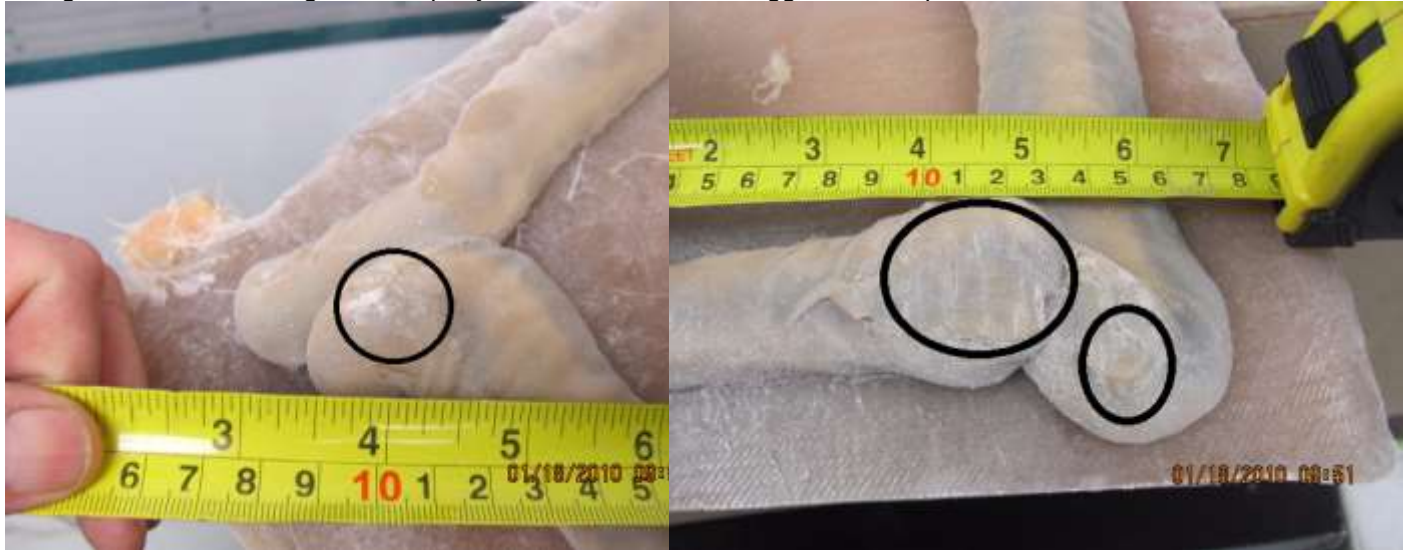
Cut out – approximately 26" long



- approximately 17" wide



Of approximately 86" linear inches of bonding putty 1 1/2" wide, only about 3 square inches of the putty showed any indication of being in contact with the hull as shown by the three circled areas below. There was no sign of laminate tearing from the putty in these three areas suggestive of a poor bond.



This bonding putty shows a wide variation in colour. Most bonding putties are colorized with consistent colour being an indication of complete mixing. This putty has a slightly tacky feel and a variable odour also suggestive of an incomplete mix.



The bonding putty bead has an average thickness of approximately 1/2".

The gap between the liner and the hull is approximately 1 3/4".



Of approximately 129 square inches of bonding putty only about 3% was in contact with the hull.

Note : As viewed through the previously mentioned inspection port on the port side, it appears that similar conditions also exist on that side of the vessel. No photos or dimensions could be reliably taken at this location with the pan intact.

### Conclusions

The perimeter adhesive bead of the liner shows no contact where accessible. ie. Along the top edge, around the bilge sump and at the engine. It appears that the liner was not properly fitted into the hull.

Of approximately 129 square inches of bonding putty in the cut out section only about 3% was in contact with the hull. The bonding putty appears to be poorly mixed and improperly cured. Limited inspection suggests a similar condition on the port side.

Repairing these localized areas without ensuring that the rest of the liner is properly bonded may simply move stresses to the next weak point in the system.

### Recommendations

Acquire from [redacted] the bonding putty pattern and determine through invasive techniques whether the rest of the liner is bonded to the hull as designed. A piece of the bonding putty should be examined by a qualified laboratory to determine its quality and whether it meets specifications to be provided by [redacted]. Further inspection using invasive techniques is advised to inspect the entire designed bonding putty contact areas.

Prepared without prejudice

W [redacted signature box]

*Captain Wallace Gouk AMS®  
Port Credit Marine Surveys  
Society of Accredited Marine Surveyors seal #757*